

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Division of Patent Application Serial No. 09/529,673 of

COOK

Atty. Ref.: 124-915

Serial No. to be assigned

Group:

Filed: January 4, 2002

Examiner:

For: PHTHALOCYANINE ANALOGS

\* \* \* \* \*

January 4, 2002

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

**PRELIMINARY AMENDMENT**

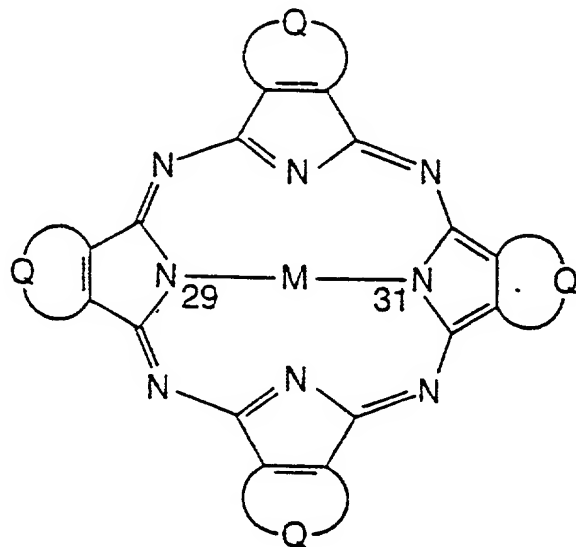
In order to place the above-identified application in better condition for  
examination, please amend the application as follows:

**IN THE CLAIMS**

Cancel claim 1 and add the following:

44. A method of treating susceptible tumors comprising the steps:

(a) sensitizing the tumor or tumors to incident electromagnetic radiation by administering to a subject in need of same, a tumor sensitizing effective amount of a compound of Formula I



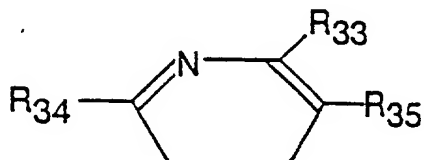
Formula I

wherein:

M is selected from a metal atom; a metal compound or 2H whereby one H is bonded to each of the two nitrogen atoms depicted as being bonded to M (positions 29 and 31 shown)

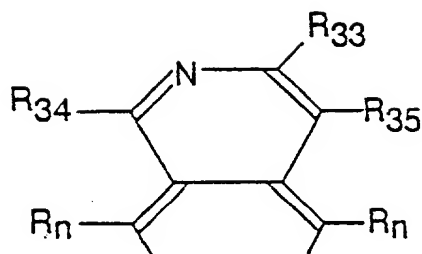
and wherein:

one or more of the Q groups is selected from formula II



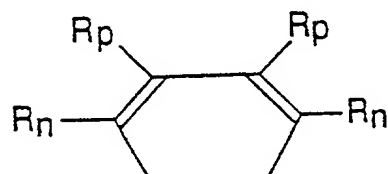
Formula II

or formula III



Formula III

with the remaining Q groups each being formula IV



Formula IV

wherein:

R<sub>33</sub> and R<sub>34</sub> are independently selected from: H or methyl,

R<sub>35</sub> is selected from H; C<sub>1</sub> to C<sub>4</sub> alkyl; C<sub>2</sub> to C<sub>4</sub> alkenyl; methoxy; butoxy; propoxy; NH<sub>2</sub>; NH-(C<sub>1</sub> to C<sub>4</sub> alkyl) and N-(C<sub>1</sub> to C<sub>4</sub> alkyl)<sub>2</sub>, S-(C<sub>1</sub> to C<sub>4</sub> alkyl),

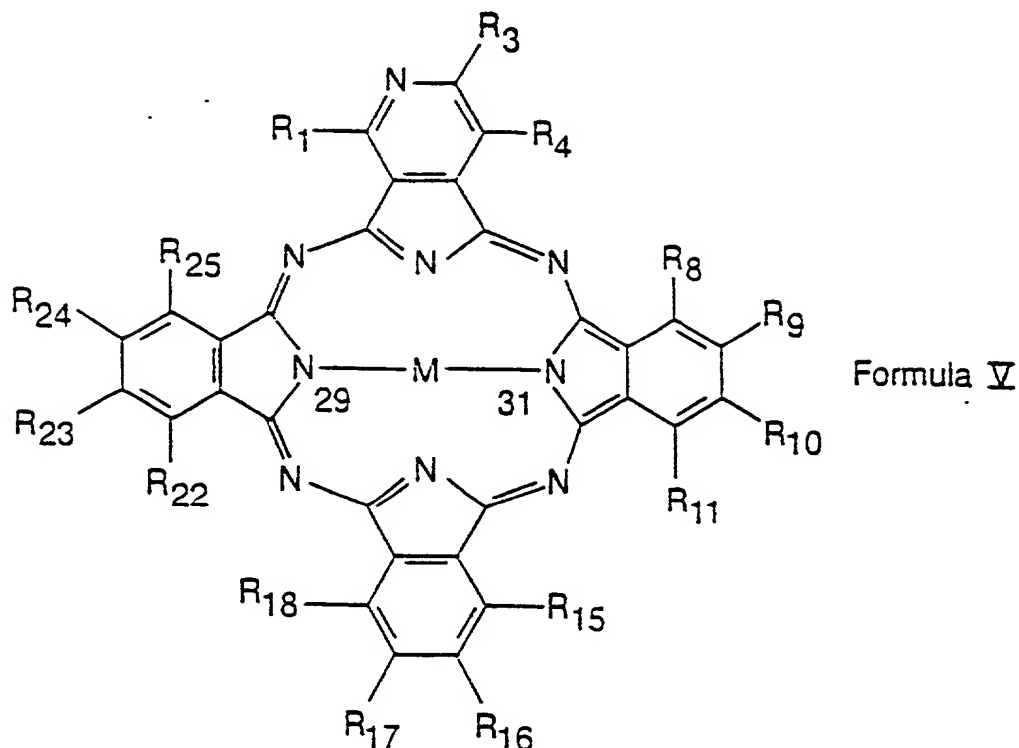
each R<sub>n</sub> and R<sub>p</sub> group is independently selected from C<sub>1</sub> to C<sub>32</sub> alkyl; C<sub>2</sub> to C<sub>32</sub> alkenyl; X-O-Y; X-phenyl X<sup>2</sup>COOX<sup>1</sup>; X<sup>2</sup>CONR<sup>1</sup>R<sup>11</sup>; H or a halide, in which X and X<sup>2</sup> are independently selected from a chemical bond; -(CH<sub>2</sub>)<sub>n</sub>- wherein n is an integer from 1 to 32; -(CH<sub>2</sub>)<sub>a</sub>-CH=CH(CH<sub>2</sub>)<sub>b</sub> where a and b are independently selected from integers 0-32 and a+b totals 32,

X<sup>1</sup> and Y are independently selected from C<sub>1</sub> to C<sub>32</sub> alkyl; C<sub>2</sub> to C<sub>32</sub> alkenyl and H, R<sup>1</sup> and R<sup>11</sup> are independently selected from H; C<sub>1</sub> to C<sub>32</sub> alkyl; C<sub>2</sub> to C<sub>32</sub> alkenyl and -(CH<sub>2</sub>)<sub>n</sub>-,

with the proviso that where more than one Q is Formula II with the remaining Q group is Formula IV at least one group independently selected from: R<sub>33</sub>, R<sub>34</sub>, R<sub>35</sub>, an R<sub>n</sub> group, an R<sub>p</sub> group, is not H; and thereafter

(b) exposing the tumor or tumors to electromagnetic radiation.

45. A method as claimed in claim 1 wherein the formula I compound has the formula V



wherein M is selected from a metal atom; a metal compound or; 2H whereby one H is bonded to each of the two nitrogen atoms depicted as being bonded to M (positions 29 and 31 shown)

R<sub>3</sub> is H or methyl

R<sub>1</sub> and R<sub>4</sub> are independently selected from H; C<sub>1</sub> to C<sub>4</sub> alkyl; C<sub>2</sub> to C<sub>4</sub> alkenyl; methoxy; butoxy; propoxy; NH<sub>2</sub>; NH-(C<sub>1</sub> to C<sub>4</sub> alkyl) and; N-(C<sub>1</sub> to C<sub>4</sub> alkyl)<sub>2</sub>, S-(C<sub>1</sub> to C<sub>4</sub> alkyl), R<sub>8</sub> to R<sub>25</sub> are the same or different and are independently selected from C<sub>1</sub> to C<sub>32</sub> alkyl; C<sub>2</sub> to C<sub>32</sub> alkenyl; X-O-Y; X-phenyl X<sup>2</sup>COOX<sup>1</sup>; X<sup>2</sup>CONR<sup>1</sup>R<sup>11</sup>; H; and halide and wherein X, X<sup>2</sup>, X<sup>1</sup>, Y, R<sup>1</sup> and R<sup>11</sup> are as defined in claim 44.

46. A mixed dimer comprising a compound of claim 44 and a further Pc or Pc derivative.

47. A mixed dimer comprising a compound of claim 45 and a further Pc or Pc derivative.

48. A polymer consisting of a compound of claim 44 in polymerized form.

49. A polymer consisting of a compound of claim 45 in polymerized form.

50. An LC device comprising two spaced walls each bearing electrode structures and treated on at least one facing surface with an alignment layer comprising a compound of claim 44.

51. An LC device comprising two spaced walls each bearing electrode structures and treated on at least one facing surface with an alignment layer comprising a compound of claim 45.

52. An LC device as claimed in either claim 49 or claim 50 wherein the LC device is an electro-optical display device.

53. A method of storing or retrieving information comprising the step of exposing a compound of claim 44 to laser radiation.

54. A method of storing or retrieving information comprising the step of exposing a compound of claim 45 to laser radiation.

55. An optical recording medium comprising a recording layer, said layer comprising a compound of claim 44.

56. An optical recording medium comprising a recording layer, said layer comprising a compound of claim 45.

57. An optical recording medium as claimed in either claim 55 or claim 56 wherein the compound is present as a spin coated film.

58. An optical recording medium as claimed in claim 57 wherein the compound is a near infra-red absorber.

59. A method of detecting a gas in a sample comprising the step of exposing a compound of claim 44.

60. A method method of detecting a gas in a sample comprising the step of exposing a compound of claim 45.

61. A gas sensor comprising a compound of claim 44.

62. A gas sensor comprising a compound of claim 45.

63. A gas sensor as claimed in claim 61 wherein the compound is present as a spin coated film.

64. An LB film comprising a compound of claim 44.

65. An LB film comprising a compound of claim 45.

66. A molecular wire comprising a compound of claim 44.

67. A molecular wire comprising a compound of claim 45.

68. A Photonic device comprising a compound of claim 44.

69. A photonic device comprising a compound of claim 45.

**REMARKS**

The above claims are directed to a range of aspects of the disclosure featured in original PCT claims but not included in the allowed claims of the parent application.

The following table gives the basis for the divisional claims. The term "PCT claim" refers to a claim as numbered in the published PCT application.

Divisional Claims	Basis
Divisional claim 44	PCT claim 1 and claim 19
Divisional claim 45	PCT claim 2 and claim 19
Divisional claims 46, 47	PCT claims 1, 2, and 39
Divisional claim 48	PCT claims 1, 2, and 41
Divisional claims 50-52	PCT claims 1, 2, 21, and 22
Divisional claims 53 and 54	PCT claims 1, 2, and 24
Divisional claims 55, 56, 57 and 58	PCT claims 1, 2, 25, 26, and 27
Divisional claims 61, 62 and 63	PCT claims 1, 2, 30, and 31
Divisional claims 64 and 65	PCT claims 1, 2, and 32
Divisional claims 66 and 67	PCT claims 1, 2, and 33
Divisional claims 68 and 69	PCT claims 1, 2, and 35

**COOK**  
Serial No.

Please examine the above claims taking into account to the extend they may be relevant the citations of record in the parent application.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_



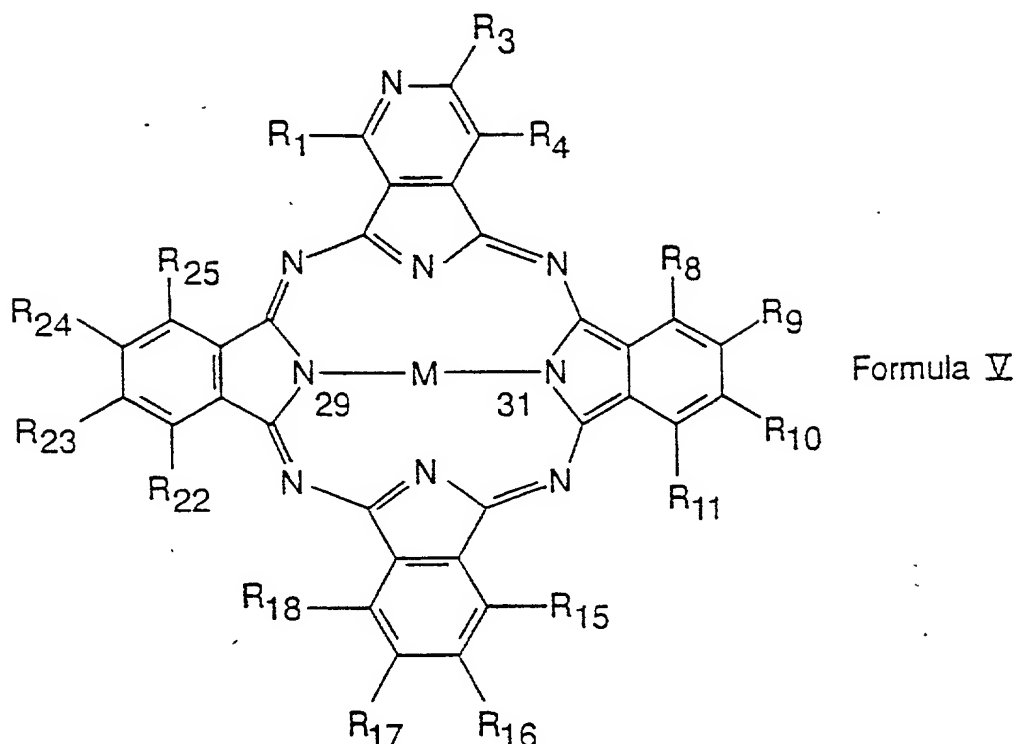
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ABSTRACT

Disclosed are compounds of formula V



where M is a metal atom; a metal compound; 2H whereby one H is bonded to each of the two nitrogen atoms depicted as being bonded to M (positions 29 and 31 shown)  $R_3$  is H or methyl;  $R_1$  and  $R_4$  are independently selected from: H,  $C_1$  to  $C_4$  alkyl,  $C_2$  to  $C_4$  alkenyl, methoxy, butoxy, propoxy,  $NH_2$ ,  $NH-(C_1$  to  $C_4$  alkyl),  $N-(C_1$  to  $C_4$  alkyl) $_2$ ,  $S-(C_1$  to  $C_4$  alkyl);  $R_8$  to  $R_{25}$  are the same or different and are independently selected from:  $C_1$  to  $C_{32}$  alkyl;  $C_2$  to  $C_{32}$  alkenyl;  $X-O-Y$ ;  $X$ -phenyl,  $X^2COOX^1$ ,  $X^2CONR^1R^{11}$ , H; halide; where:  $X$  and  $X^2$  are independently selected from: a chemical bond,  $-(CH_2)_n-$  where  $n$  is an integer from 1 to 32,  $-(CH_2)_a-CH=CH(CH_2)_b$  where  $a$  and  $b$  are independently selected from integers 0-32 and  $a+b$  totals 32;  $X^1$  and  $Y$  are independently selected from:  $C_1$  to  $C_{32}$  alkyl,  $C_2$  to  $C_{32}$  alkenyl, and H;  $R^1$  and  $R^{11}$  are independently selected from: H;  $C_1$  to  $C_{32}$  alkyl,  $C_2$  to  $C_{32}$  alkenyl,  $-(CH_2)_n-$ ; with the proviso that at least one of  $R_8$  to  $R_{25}$  is selected from:  $C_1$  to  $C_{32}$  alkyl,  $C_2$  to  $C_{32}$  alkenyl,  $X-O-Y$ ,  $X$ -phenyl,  $X^2COOX^1$ ,  $X^2CONR^1R^{11}$ .